



FAIRFAX
COUNTY

STAFF REPORT

V I R G I N I A

PROPOSED ZONING ORDINANCE AMENDMENT

Telecommunication Facilities: Modifications to Permit Antennas & Related Equipment on Existing or Replacement Utility Poles or Light/Camera Standards

PUBLIC HEARING DATES

Planning Commission

October 1, 2014 at 8:15 p.m.

Board of Supervisors

October 28, 2014 at 4:30 p.m.

**PREPARED BY
ZONING ADMINISTRATION DIVISION
DEPARTMENT OF PLANNING AND ZONING
703-324-1314**

July 29, 2014

ABH



Americans With Disabilities Act (ADA): Reasonable accommodation is available upon 7 days advance notice. For additional information on ADA call 703-324-1334 or TTY 711 (Virginia Relay Center).

STAFF COMMENT

The proposed amendment is on the 2014 Priority 1 Zoning Ordinance Amendment Work Program. The purpose of this amendment is to make those minor modifications to Par. 2A of Section 2-514 of the Zoning Ordinance, which facilitate the location of multiple telecommunication carriers, or allow a single carrier to operate within multiple frequency bands, on an existing or replacement utility pole or light/camera standards located in any street right-of-way or utility easement. The primary application of the specific technology that has generated and is associated with this amendment is for small cell, wireless Distributed Antennas Systems (DAS).

Background

On October 23, 2013, the Department of Planning & Zoning received 2232 Review Application #2232-H13-16, NewPath Networks, LLC/Crown Castle, seeking a determination for the location of a wireless Distributed Antenna System (DAS) on several replacement utility poles owned by Virginia Dominion Power, and located within Virginia Department of Transportation (VDOT) right-of-way in the Hunter Mill and Providence magisterial districts. In total, three different nodes are proposed, on three replacement poles located along Vale Road, west of its intersection with Lakevale Drive; Carey Lane, at its intersection with Vale Road; and Fair Oaks Road, at its intersection with Oak Valley Drive. The system would provide needed coverage on Hunter Mill and Lawyers Road and those surrounding residential communities, and will accommodate service by four major carriers. Each node consists of 6 panel antennas approximately 22 inches in height and 1 foot in width, which are concealed in a cylindrical sheath attached to the top of the replacement poles and painted to match. In addition, a pole mounted equipment cabinet is proposed for each node, which is approximately 7.5 feet in height, 3 feet in width and 2 feet in depth, for a total of approximately 45 cubic feet in volume. The larger size of the equipment cabinet is necessary given the number of carriers and types of service that will be located on each node; a more in depth explanation of this issue is found below as part of the discussion on the proposed amendment.

Based on the proposed colocation on utility poles, the application is subject to those existing provisions found in Par. 2A of Section 2-514 of the Fairfax County Zoning Ordinance, which regulates antennas located on existing or replacement utility and transmission poles and light/camera standards in any street right-of-way or utility easement. Specifically, Par. 2A limits panel antennas to just 4 in number, with a maximum height of 5 feet and a width of 1 foot. The smaller size and limitations on the number of antennas should be noted, since this particular Ordinance section allows their location on poles and standards by-right in any right-of-way or utility easement, resulting in the potentially broad application of such facilities throughout the County. Subsequent sections of the Section 2-514 allow much larger antennas and, as such, they are further limited in areas in which they can be located, depending largely on road classifications and proximity to residentially zoned areas. In addition to the limitation on number and antenna size, the requirements in Par. 2A also limit the size of the associated equipment cabinets to a maximum height of 5 feet and no more than 20 cubic feet in volume. (For reference, a cabinet that is 20 cubic feet in volume could come in a variety of sizes. However, if one assumes the maximum height of 5 feet, this could result in a cabinet that could be 2 feet in width and 2 feet in depth.) Given each of these limitations, the existing provisions

in Par. 2A make it difficult to accommodate, as a by-right use, a telecommunication facility that seeks to locate multiple carriers on a single pole or standard.

To address these issues, it was determined that an amendment to the existing provisions would be the only manner to allow a system such as that proposed by Crown Castle to establish its facilities by-right. In addition, this specific applicant is also anticipating future 2232 applications that would exceed the current Zoning Ordinance requirements. As a first step to a potential amendment, staff reviewed the existing Ordinance provisions to determine the purpose of these limitations. The provisions found in Par. 2A of Section 2-514 were adopted as part of Zoning Ordinance Text Amendment ZO-03-359, as approved by the Fairfax County Board of Supervisors on September 29, 2003, with an effective date of September 30, 2003. Prior to adoption of the text amendment, panel antennas were not permitted on utility poles or light/camera standards, and equipment cabinets allowed in support of a permitted facility could not exceed 2 cubic feet, with no limitation on overall dimensions. However, based on demand and new wireless antenna design occurring in the late 1990's and early 2000's, it was believed at that time that small panel antennas would have minimal visual impact and would be appropriate to allow by-right in residential areas, particularly if such were flush mounted to and blended well visually with the pole or standard. For this reason, it was justified to allow facilities that proposed small antennas throughout the County, so the provisions in Par. 2A were so worded to include location on any pole or standard within any right-of-way or utility easement. In addition, staff at that time justified the increase in cabinet size from 2 to 20 cubic feet on the basis that many of the telephone, cable, electric and traffic light equipment cabinets commonly found within VDOT right-of-way greatly exceed the size limitations placed on telecommunication cabinets.

Next, staff looked at a number of current, proposed facilities that are seeking to locate small antennas on utility pole or light/camera standards, in an attempt to better understand the particulars of the issues that are now being raised, and to see if there is some way that these proposals could in fact be modified to meet the current requirements. As was occurring in those years leading up to the 2003 amendment, there has been a similar increase in demand for more coverage in recent times, and there have also been numerous innovations to antenna and equipment design. However, different than 2003 has been the opening up of additional frequency bands by the Federal Communications Commission (FCC), combined with the growing number of *spectrum uses* such as voice and data. As such, there is a new-old push within the telecommunications industry to acquire greater spectrum in order to meet consumer demand. Furthermore, there also appears to be a current trend towards lower power, small-cell, i.e. micro, systems that would include DAS, which provide necessary service to specific, targeted areas as opposed to a larger structure, such as a monopole, that could provide coverage to a much larger geographic area. What is being proposed by the Crown Castle application is unique, in that it is a DAS that can accommodate four major carriers, which are operating in various frequency bands. The increased cabinet size is driven by the different frequency bands of the users, in that each frequency requires its own ancillary equipment such as a radio and battery power. The same scenario would also apply to a single carrier that is operating within multiple frequency bands - each unique frequency band requires its own dedicated equipment. If one were to break up the proposed system, and each carrier located on 3 separate nodes, it would result in a smaller number of antennas on each node and an equipment cabinet that could meet the current height and size requirements. However, such a system would require colocation of antennas and associated

equipment on 12 different poles, as opposed to the 3 poles proposed as part of the current 2232 application. While it would meet the letter of the Zoning Ordinance, this result may be perceived to be at odds with the spirit of some of the policies of the Comprehensive Plan, which seek to promote collocation on existing utility structures and mitigate visual impact.

Proposed Amendment

The proposed Zoning Ordinance amendment seeks to increase the maximum allowed volume and height of an unmanned equipment cabinet that is permitted to be located by-right on an existing or replacement utility distribution and transmission pole or light/camera standard in any street right-of-way or utility easement, in support of a telecommunication facility. In addition, the amendment also clarifies the limitation placed on the number of permitted antennas for such facilities by eliminating the maximum allotment when the proposed antennas are entirely enclosed within a stealth extension of the existing or replacement pole or standard. It is noted that while these facilities are proposed to be allowed by-right under the Zoning Ordinance, a determination that these facilities conform to the location, character and extent of the Comprehensive Plan would still be required under Sect. 15.2-2232 of the *Code of Virginia* (2232 Review)..

As proposed, there are two separate changes to Par. 2A of Section 2-514, which deals exclusively with those smaller antennas that are permitted on poles or standards in any street right-of-way or utility easement. First, staff is proposing to allow an increase in the number of antennas allowed on an existing or replacement utility pole or light/camera standard. The current provision allows up to 3 omnidirectional/whip antennas, with a maximum size of 8 ½ feet in height or 3 inches in diameter, and up to 4 panel antennas panel not exceeding 5 feet in height or one 1 foot in width. Staff is not recommending any change in the overall antenna size but has drafted language that would remove the limit on the number of permitted antennas, but *only* in those instances when the panel antennas are completely enclosed within a stealth sheath or cap located on the top of the pole or standard. This proposed language is the same concept that is used in other parts of Section 2-514, where limitations are not placed on antennas and/or associated equipment when located inside of another structure, or are similarly concealed in a manner to greatly reduce visibility. In addition, it is in keeping with the original intent of the 2003 amendment, which justified small panel antennas throughout those right-of-ways and utility easements in predominantly residential areas, particularly if such blended well visually with the pole or standard.

Second, staff is also recommending an increase to the permitted equipment cabinet size that is specified in Par. 2A(3), which are currently limited to no more than 5 feet in height, with a maximum volume of 20 cubic feet. As proposed, staff is recommending an increase to 8 feet in height, with a maximum volume of 50 cubic feet. This will easily accommodate a scenario in which multiple carriers or a single carrier operating in multiple frequency bands could locate on a single node, and provide the necessary volume of cabinet space to accommodate multiple sets of equipment. While it is acknowledged that 50 cubic feet of volume is more than double the current size, the additional height results in only a half foot increase to the width and depth, assuming that a cabinet maximizes the full 8 foot height. When mounted on a pole, the increase in height from 5 to 8 feet may or may not be easily discernible, depending on the actual mounting height.

It is noted that the proposed changes are limited to only those antennas allowed by-right pursuant to Par. 2A of Section 2-514. Furthermore, based on feedback provided by the Board at the time of authorization, staff has also added language to Par. 2A(3) to clarify that the placement of any equipment cabinet will be required to meet all applicable site distance and visibility requirements specified by Fairfax County and/or VDOT. The applicant has expressed a desire to allow, by-right, the larger cabinet sizes for those antennas allowed pursuant to Par. 2B, with further limitations found in Par. 2C. However, staff does not support this approach as these antennas are larger and there is no limitation on overall number. Furthermore, these provisions allow a much taller replacement pole or standard, ranging from 80 to 125 feet, to include the antennas, whereas the maximum height of the replacement pole or standard for those applications allowed pursuant to Par. 2A is only 64 feet, including the antennas. The standard utility pole in the United States is approximately 40 feet in length, with about 5 feet buried in the ground, leaving an effective height of 35 feet. According to the applicant, when the poles are replaced, they are increased in height anywhere from 5 to 15 feet in order to accommodate the additional load that will be carried when a facility is installed. In addition, the cylindrical sheath containing the antennas is approximately 6 feet in height. Assuming that the full 15 feet of additional height is needed for the replacement pole, the overall height of the pole with the sheath would be 56 feet, which is well under the 64 foot threshold prescribed in Par. 2A. A review of the Crown Castle application supports this analysis, as it shows that the proposed nodes are located on replacement poles that will be well under the 64 foot limit. For these reasons, staff does not believe it is necessary at this time to extend the proposed changes to additional provisions found in Section 2-514. Should it be determined at a later date that such changes are needed, they can be properly reviewed as a separate amendment with the benefit of having real life examples of larger cabinets that could be reviewed for impacts if this amendment is ultimately adopted.

Conclusion

Staff believes that is appropriate to make the proposed amendments to Par.2A of Section 2-514 of the Zoning Ordinance, since these changes would facilitate the location of small-cell telecommunication facilities on existing utility infrastructure, in support of the policies set forth in the Comprehensive Plan. Therefore, staff recommends approval of the proposed amendment with an effective date of 12:01 a.m. on the day following adoption.

PROPOSED AMENDMENT

This proposed Zoning Ordinance amendment is based on the Zoning Ordinance in effect as of July 29, 2014 and there may be other proposed amendments which may affect some of the numbering, order or text arrangement of the paragraphs or sections set forth in this amendment, which other amendments may be adopted prior to action on this amendment. In such event, any necessary renumbering or editorial revisions caused by the adoption of any Zoning Ordinance amendments by the Board of Supervisors prior to the date of adoption of this amendment will be administratively incorporated by the Clerk in the printed version of this amendment following Board adoption.

Amend Article 2, General Regulations, Part 5, Qualifying Use, Structure Regulations, Sect. 2-514 Limitations on Mobile and Land Based Telecommunication Facilities, by revising Par. 2A to read as follows:

2. Antennas mounted on existing or replacement utility distribution and transmission poles (poles) and light/camera standards (standards), with related unmanned equipment cabinets and/or structures, shall be permitted in accordance with the following and may exceed the maximum building height limitations, subject to the following paragraphs:

A. Omnidirectional/whip antennas not exceeding eight and one-half (8 ½) feet in height or three (3) inches in diameter and panel antennas not exceeding five (5) feet in height or one (1) foot in width shall be permitted on a pole or standard located in any street right-of-way or any utility easement subject to the following and Paragraphs 2D through 2I below:

(1) ~~There~~ Except for antennas totally enclosed within an extension of a new or replacement pole or standard, there shall be a maximum of three (3) omnidirectional /whip antennas or four (4) panel antennas. Such extension shall be of a material or color which closely matches and blends with the pole or standard.

(2) Antennas shall be flush mounted so that the antenna with supporting mount does not extend more than eight and one-half (8 ½) feet above the pole or standard or one (1) foot from the pole or standard.

(3) An equipment cabinet or structure not exceeding ~~twenty (20)~~ fifty (50) cubic feet in volume or ~~five (5)~~ eight (8) feet in height shall be located on or adjacent to the same pole or standard. Such cabinet shall be located so as not to obstruct any applicable site distance and/or visibility standards required by Fairfax County or the Virginia Department of Transportation.

[The advertised range is up to sixty (60) cubic feet]

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- (4) The height of a replacement pole or standard, including antennas, shall not exceed sixty-four (64) feet in height. The diameter of a replacement pole or standard shall not exceed eighteen (18) inches.